



IDS #16

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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT				APPLICANT(S): Fitzgerald et al.			
				SERIAL NO.: 09/884,517			
				FILING DATE: June 19, 2001 GROUP: 2822			
U.S. PATENT DOCUMENTS							
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
KBD	A1	5,155,571	10/13/1992	Wang et al.	357	47	08/06/1990
	A2	5,442,205	08/15/1995	Brasen et al.	257	191	08/09/1993
	A3	5,523,592	06/04/1996	Nakagawa et al.	257	96	02/01/1994
	A4	5,683,934	11/04/1997	Candelaria	437	134	05/03/1996
	A5	5,792,679	08/11/1998	Nakato	438	162	08/30/1993
	A6	5,891,769	04/06/1999	Liaw et al.	438	167	02/27/1998
	A7	6,058,044	05/02/2000	Sugiura et al.	365	185.17	12/09/1998
	A8	6,096,590	08/01/2000	Chan et al.	438	233	06/30/1998
	A9	6,117,750	09/12/2000	Bensahel et al.	438	478	12/21/1998
	A10	6,207,977	03/27/2001	Augusto	257	192	10/21/1998
	A11	6,251,755	06/26/2001	Furukawa et al.	438	510	04/22/1999
	A12	6,339,232	01/15/2002	Takagi	257	192	09/20/1999
	A13	6,350,993	02/26/2002	Chu et al.	257	19	03/12/1999
	A14	6,399,970 B2	06/04/2002	Kubo et al.	257	194	09/16/1997
	A15	6,407,406	06/18/2002	Tezuka	257	18	06/29/1999
	A16	US 2001/0003364 A1	06/14/2001	Sugawara et al.	257	192	12/08/2000
	A17	US 2002/0100942 A1	08/01/2001	Fitzgerald et al.	257	369	06/19/2001
	A18	US 2002/0125497 A1	09/12/2002	Fitzgerald	257	191	07/16/2001
	A19	US 2002/0125471 A1	09/12/2002	Fitzgerald et al.	257	19	12/04/2001
KBD	A20	US 2002/0140031 A1	10/03/2002	Rim	257	347	03/31/2001
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FOREIGN PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUN TRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTR ACT ONLY	ENGLISH LANG (Y/N)
KBD	B1	41 01 167 A1	07/23/1992	DE				No	Yes (abstract only)
	B2	1 174 928 A1	01/23/2002	EP				No	Yes
	B3	1 020 900 A2	07/19/2000	EP				No	Yes
	B4	0 683 522 A2	11/22/1995	EP				No	Yes
	B5	0 829 908 A2	03/18/1998	EP				No	Yes
	B6	0 838 858 A2	04/29/1998	EP				No	Yes
	B7	10-270685	10/09/1998	JP				Yes	Yes
	B8	2000021783	01/21/2000	JP				Yes	Yes
	B9	2001319935	05/11/2000	JP				Yes	No
	B10	WO 98/59365	12/30/1998	PCT				No	Yes
	B11	WO 99/53539	10/21/1999	PCT				No	Yes
	B12	WO 00/54338	09/14/2000	PCT				No	Yes
	B13	WO 01/54202 A1	07/26/2001	PCT				No	Yes
	B14	WO 01/93338 A1	12/06/2001	PCT				No	Yes
	B15	WO 01/99169 A2	12/27/2001	PCT				No	Yes
	B16	WO 02/15244A2	02/21/2002	PCT				No	Yes
	B17	WO 02/13262 A2	02/14/2002	PCT				No	Yes
	B18	WO 02/47168 A2	06/13/2002	PCT				No	Yes
	B19	WO 02/071488 A1	09/12/2002	PCT				No	Yes
	B20	WO 02/071491 A1	09/12/2002	PCT				No	Yes
	B21	WO 02/071495 A1	09/12/2002	PCT				No	Yes
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OTHER ART, JOURNAL ARTICLES, ETC.		
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)	
KRD	C1	Armstrong et al., "Design of Si/SiGe Heterojunction Complementary Metal-Oxide-Semiconductor Transistors," <u>IEDM Technical Digest</u> (1995 International Electron Devices Meeting) pp. 761-764.
	C2	Barradas et al., "RBS analysis of MBE-grown SiGe/(001) Si heterostructures with thin, high Ge content SiGe channels for HMOS transistors," <u>Modern Physics Letters B</u> (2001) (abstract).
	C3	Bouillon et al., "Search for the optimal channel architecture for 0.18/0.12 μ m bulk CMOS Experimental study," <u>IEEE</u> , (1996) pp. 21.2.1-21.2.4.
	C4	Bufler et al., "Hole transport in strained Si _{1-x} Ge _x alloys on Si _{1-y} Ge _y substrates," <u>Journal of Applied Physics</u> , Vol. 84, No. 10 (November 15, 1998) pp. 5597-5602.
	C5	Canaperi et al., "Preparation of a relaxed Si-Ge layer on an insulator in fabricating high-speed semiconductor devices with strained epitaxial films," <u>International Business Machines Corporation</u> , USA (2002) (abstract).
	C6	Carlin et al., "High Efficiency GaAs-on-Si Solar Cells with High V _{oc} Using Graded GeSi Buffers," <u>IEEE</u> (2000) pp. 1006-1011
	C7	Cheng et al., "Electron Mobility Enhancement in Strained-Si n-MOSFETs Fabricated on SiGe-on-Insulator (SGOI) Substrates," <u>IEEE Electron Device Letters</u> , Vol. 22, No. 7 (July 2001) pp. 321-323.
	C8	Cheng et al., "Relaxed Silicon-Germanium on Insulator Substrate by Layer Transfer," <u>Journal of Electronic Materials</u> , Vol. 30, No. 12 (2001) pp. L37-L39.
	C9	Cullis et al., "Growth ripples upon strained SiGe epitaxial layers on Si and misfit dislocation interactions," <u>Journal of Vacuum Science and Technology A</u> , Vol. 12, No. 4 (July/August 1994) pp. 1924-1931.
	C10	Currie et al., "Carrier mobilities and process stability of strained Si- and p-MOSFETs on SiGe virtual substrates," <u>J. Vac. Sci. Technol. B</u> , Vol. 19, No. 6 (Nov/Dec 2001) pp. 2268-2279.
	C11	Currie et al., "Controlling threading dislocation densities in Ge on Si using graded SiGe layers and chemical-mechanical polishing," <u>Applied Physics Letters</u> , Vol. 72, No. 14 (April 6, 1998) pp 1718-1720.
	C12	Eaglesham et al., "Dislocation-Free Stranski-Krastanow Growth of Ge on Si(100)," <u>Physical Review Letters</u> , Vol. 64, No. 16 (April 16, 1990) pp. 1943-1946.
	C13	Fischetti et al., "Band structure, deformation potentials, and carrier mobility in strained Si, Ge, and SiGe alloys," <u>J. Appl. Phys.</u> , Vol. 80, No. 4 (August 15, 1996) pp. 2234-2252.
	C14	Fischetti, "Long-range Coulomb interactions in small Si devices. Part II. Effective electron mobility in thin-oxide structures," <u>Journal of Applied Physics</u> , Vol. 89, No. 2 (January 15, 2001) pp. 1232-1250.
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<i>KBD</i>	C15	Fitzgerald et al., "Relaxed $\text{Ge}_x\text{Si}_{1-x}$ structures for III-V integration with Si and high mobility two-dimensional electron gases in Si," <u>J. Vac. Sci. Technol. B</u> , Volume 10, No. 4 (July/August 1992) pp. 1807-1819.
	C16	Fitzgerald et al., "Dislocation dynamics in relaxed graded composition semiconductors," <u>Materials Science and Engineering B67</u> , (1999) pp. 53-61.
	C17	Fitzgerald et al., "Totally relaxed $\text{Ge}_x\text{Si}_{1-x}$ layers with low threading dislocation densities grown on Si substrates," <u>Appl. Phys. Lett.</u> , Vol. 59, No. 7 (August 12, 1991) pp. 811-813.
	C18	Garone et al., "Silicon vapor phase epitaxial growth catalysis by the presence of germane," <u>Applied Physics Letters</u> , Vol. 56, No. 13 (March 26, 1990) pp. 1275-1277.
	C19	Grützmacher et al., "Ge segregation in SiGe/Si heterostructures and its dependence on deposition technique and growth atmosphere," <u>Applied Physics Letters</u> , Vol. 63, No. 18 (November 1, 1993) pp. 2531-2533.
	C20	Hackbarth et al., "Alternatives to thick MBE-grown relaxed SiGe buffers," <u>Thin Solid Films</u> , Vol. 369, (2000) pp. 148-151.
	C21	Hackbarth et al., "Strain relieved SiGe buffers for Si-based heterostructure field-effect transistors," <u>Journal of Crystal Growth</u> , Vol. 201/202 (1999) pp. 734-738.
	C22	Herzog et al., "SiGe-based FETs: buffer issues and device results," <u>Thin Solid Films</u> , Vol. 380 (2000) pp. 36-41.
	C23	Höck et al., "Carrier mobilities in modulation doped $\text{Si}_{1-x}\text{Ge}_x$ heterostructures with respect to FET applications," <u>Thin Solid Films</u> , Vol. 336 (1998) pp. 141-144.
	C24	Höck et al., "High hole mobility in $\text{Si}_{0.17}\text{Ge}_{0.83}$ channel metal-oxide-semiconductor field-effect transistors grown by plasma-enhanced chemical vapor deposition," <u>Applied Physics Letters</u> , Volume 76, No. 26 (June 26, 2000) pp. 3920-3922.
	C25	Höck et al., "High performance 0.25 μm p-type Ge/SiGe MODFETs," <u>Electronics Letters</u> , Vol. 34, No. 19 (September 17, 1998) pp. 1888-1889.
	C26	Ismail et al., "Modulation-doped n-type Si/SiGe with inverted interface," <u>Appl. Phys. Lett.</u> , Vol. 65, No. 10 (September 5, 1994) pp. 1248-1250.
	C27	Kearney et al., "The effect of alloy scattering on the mobility of holes in a $\text{Si}_{1-x}\text{Ge}_x$ quantum well," <u>Semicond. Sci Technol.</u> , Vol. 13 (1998) pp. 174-180.
	C28	Koester et al., "Extremely High Transconductance Ge/ $\text{Si}_{0.4}\text{Ge}_{0.6}$ p-MODFET's Grown by UHV-CVD," <u>IEEE Electron Device Letters</u> , Vol. 21, No. 3 (March 2000) pp. 110-112.
	C29	König et al., "Design Rules for n-type SiGe Hetero FETs," <u>Solid-State Electronics</u> , Vol. 41, No. 10 (1997) pp. 1541-1547.
	C30	König et al., "p-Type Ge-Channel MODFET's with High Transconductance Grown on Si Substrates," <u>IEEE Electron Device Letters</u> , Vol. 14, No. 4 (April 1993) pp. 205-207.
	C31	König et al., "SiGe HBTs and HFETs," <u>Solid-State Electronics</u> , Vol. 38, No. 9 (1995) pp. 1595-1602.
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C32	Lee et al., "Strained Ge channel <i>p</i> -type metal-oxide-semiconductor field-effect transistors grown on Si _{1-x} Ge _x /Si virtual substrates," <u>Applied Physics Letters</u> , Vol. 79, No. 20 (November 12, 2001) pp. 3344-3346.	
C33	Lee et al., "Strained Ge channel <i>p</i> -type MOSFETs fabricated on Si _{1-x} Ge _x /Si virtual substrates," <u>Mat. Res. Soc. Symp. Proc.</u> , Vol. 686 (2002) pp. A1.9.1-A1.9.5.	
C34	Leitz et al., "Channel Engineering of SiGe-Based Heterostructures for High Mobility MOSFETs," <u>Mat. Res. Soc. Symp. Proc.</u> , Vol. 686 (2002) pp. A3.10.1-A3.10.6.	
C35	Leitz et al., "Dislocation glide and blocking kinetics in compositionally graded SiGe/Si," <u>Journal of Applied Physics</u> , Vol. 90, No. 6 (September 15, 2001) pp. 2730-2736.	
C36	Leitz et al., "Hole mobility enhancements in strained Si/Si _{1-x} Ge _y <i>p</i> -type metal-oxide-semiconductor field-effect transistors grown on relaxed Si _{1-x} Ge _x (<i>x</i> < <i>y</i>) virtual substrates," <u>Applied Physics Letters</u> , Vol. 79, No. 25 (December 17, 2001) pp. 4246-4248.	
C37	Li et al., "Design of high speed Si/SiGe heterojunction complementary metal-oxide-semiconductor field effect transistors with reduced short-channel effects," <u>J. Vac. Sci. Technol.</u> , A Vol. 20 No.3 (May/June 2002) pp. 1030-1033.	
C38	Maiti et al., "Strained-Si Heterostructure Field Effect Transistors," <u>Semiconductor Science and Technology</u> , Vol. 13 (1998) pp. 1225-1246.	
C39	Meyerson et al., "Cooperative Growth Phenomena in Silicon/Germanium Low-Temperature Epitaxy," <u>Applied Physics Letters</u> , Vol. 53, No. 25 (December 19, 1988) pp. 2555-2557.	
C40	Mizuno et al., "Advanced SOI-MOSFETs with Strained-Si Channel for High Speed CMOS-Electron/Hole Mobility Enhancement," "2002 Symposium on VLSI Technology, Digest of Technical Papers, Honolulu, (June 13-15), IEEE New York, NY, pp. 210-211.	
C41	O'Neill et al., "SiGe Virtual substrate N-channel heterojunction MOSFETs," <u>Semicond. Sci. Technol.</u> , Vol. 14 (1999) pp. 784-789.	
C42	Parker et al., "SiGe heterostructure CMOS circuits and applications," <u>Solid State Electronics</u> , Vol. 43 (1999) pp. 1497-1506.	
C43	Ransom et al., "Gate-Self-Aligned n-channel and p-channel Germanium MOSFET's," <u>IEEE Transactions on Electron Devices</u> , Vol. 38, No. 12 (December 1991) pp. 2695.	
C44	Reinking et al., "Fabrication of high-mobility Ge <i>p</i> -channel MOSFETs on Si substrates," <u>Electronics Letters</u> , Vol. 35, No. 6 (March 18, 1999) pp. 503-504.	
C45	Robbins et al., "A model for heterogeneous growth of Si _{1-x} Ge _x films for hydrides," <u>Journal of Applied Physics</u> , Vol. 69, No. 6 (March 15, 1991) pp. 3729-3732.	
C46	Sadek et al., "Design of Si/SiGe Heterojunction Complementary Metal-Oxide-Semiconductor Transistors," <u>IEEE Transactions on Electron Devices</u> , Vol. 43, No. 8 (August 1996) pp. 1224-1232.	
C47	Schäffler, "High-Mobility Si and Ge Structures," <u>Semiconductor Science and Technology</u> , Vol. 12 (1997) pp. 1515-1549.	
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<i>WBD</i>	C48	Tweet et al., "Factors determining the composition of strained GeSi layers grown with disilane and germane," <u>Applied Physics Letters</u> , Vol. 65, No. 20 (November 14, 1994) pp. 2579-2581.
	C49	Usami et al., "Spectroscopic study of Si-based quantum wells with neighboring confinement structure," <u>Semicon. Sci. Technol.</u> (1997) (abstract).
	C50	Welser et al., "Evidence of Real-Space Hot-Electron Transfer in High Mobility, Strained-Si Multilayer MOSFETs," <u>IEEE IDEM Technical Digest</u> (1993 International Electron Devices Meeting) pp. 545-548.
	C51	Wesler et al., "NMOS and PMOS Transistors Fabricated in Strained Silicon/Relaxed Silicon-Germanium Structures," <u>IEEE IDEM Technical Digest</u> (1992 International Electron Devices Meeting) pp. 1000-1002.
	C52	Xie et al., "Semiconductor Surface Roughness: Dependence on Sign and Magnitude of Bulk Strain," <u>The Physical Review Letters</u> , Vol. 73, No. 22 (November 28, 1994) pp. 3006-3009.
	C53	Xie et al., "Very high mobility two-dimensional hole gas in Si/ Ge _x Si _{1-x} /Ge structures grown by molecular beam epitaxy," <u>Appl. Phys. Lett.</u> , Vol. 63, No. 16 (October 18, 1993) pp. 2263-2264.
	C54	Xie, "SiGe Field effect transistors," <u>Materials Science and Engineering</u> , Vol. 25 (1999) pp. 89-121.
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